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## ABSTRACT

Preliminary results are presented from a longitudinal project comparing: (1) children with developmental delays either originally in mainstream preschool programs (N=91) or originally in segregated programs (N=50), and (2) typical children originally in either mainstream preschool programs (N=88) or in nonintegrated regular preschool programs (N=75). Subjects are compared in the following assessment areas: developmental and cognitive functioning; social interaction; social skills; parent ratings of behavior; parent involvement and satisfaction with their child's educational program; parent opinions about integration; teacher opinions about integration; and administrator opinions about integration. In general, most measures indicated no significant differences between children with developmental delays in mainstream and segregated programs, or between typical children in mainstream and segregated programs. Data about parent attitudes toward integration and parent involvement reflect some changes over time. Teachers and administrators held positive attitudes toward mainstreaming. (JDD)

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## The Longitudinal Project

A Component of the *Research Institute on Preschool Mainstreaming*

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# LONGITUDINAL PROJECT RESULTS

*When reading these findings, it is very important to remember that only three years of this five-year project have been completed. Until all of the information has been gathered, it is not appropriate to draw substantive conclusions.*

The groups established for comparison in the Longitudinal Project included: 1) children with developmental delays originally in mainstream preschool programs (91), children with developmental delays originally in segregated programs (50), and 2) typical children originally in mainstream preschool programs (88), and typical children originally in non-integrated preschool programs (75). Although each child may have changed placement status in a mainstream or segregated setting, and may or may not have retained identification as developmentally delayed, the children will be grouped according to their original classifications so that the long-term effects of the original setting can be examined.

Findings will be presented for each area of assessment in the following order: findings in year 3, examination of changes from year 2 to year 3, and examination of changes from year 1 to year 3.

## Developmental and Cognitive Functioning

### Children with Developmental Delays

The BDI was administered to a limited number of children during year 3 because the majority of children had reached the ceiling score for at least one domain on this developmental test. The remaining children received the K-BIT and will be discussed next. An analysis of the year 3 scores for the 52 children who did receive the test indicate there were no significant differences between the groups in any domain or subdomain of the BDI, or in total score.

Comparatively the children from both groups made similar progress from year 2 to year 3. The descriptive data which indicates "better, same, or worse" for each child's progress gave the edge in improvement to the segregated group for the total score but the results for each developmental area (motor, cognitive, etc.) were mixed.

Similarly, analysis of the change in scores from year 1 to year 3 revealed no significant differences

between the groups. The descriptive data for each child's progress were again mixed for the domain scores. Overall, the two groups showed similar rates of progress for the total score.

### Kaufmann Brief Intelligence Test

The Kaufmann Brief Intelligence Test (K-BIT) was administered to the majority of children during year 3 as previously described. The K-BIT provides standard scores for Vocabulary, Matrices (or problem solving) and Composite.

### Children with Developmental Delays

Analysis revealed no differences between the groups on either of the domains or the composite score. However, in each category the children in the integrated group scored higher than their segregated counterparts. For the total score the means were 94 and 91 respectively (mean standard score is 100). As this was the first year for the K-BIT no comparisons are available.

### Typical Children

Comparison revealed significant differences for both the vocabulary domain and the composite score between the two groups of typical children. In each area the non-integrated group outperformed the mainstream group. For the vocabulary domain, the means of 100 and 107 favored the non-integrated group, just as the means of 100 and 106 favored this group on the composite score. However, as noted, both groups were at or above the mean standard score (national average) of 100.

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## Social Interaction

The information gathered in this area was obtained by direct observation of the children during a 20-minute freeplay or recess period. The information gathered included the percent of time the child spent interacting with classmates, the average duration of each interaction, as well as the positive or negative nature of those interactions.

### Children with Developmental Delays

Analysis revealed similar patterns of social interaction for both groups, including rate, duration and the positive or negative nature of interaction. No significant differences between the two groups were indicated.

Comparatively, the change in interaction rates from year 2 to year 3 and from year 1 to year 3, did not indicate any significant differences between the two groups.

### Typical Children

Year 3 observations indicated no significant differences between the two groups in the percentage of time spent interacting with classmates, the percentage of interactions which were positive or negative in nature, or in the duration of their interactions.

Analysis of the change in interactive rates from year 2 to year 3 revealed no significant differences

between the two groups. However, comparisons of the change in interaction rates from year 1 to year 3 revealed a significant difference between the two groups in the percent of time spent interacting with classmates. Children situated in the mainstream group had a mean increase of 23% in the number of intervals containing interaction while children in the non-integrated group had a mean increase of 10%.

In addition to the gains in rate of interaction, children in the mainstream group also made greater gains in the duration of their interactions with peers as compared to their counterparts. Ninety percent of the children in the mainstream group displayed an increase in duration of their interactions as compared to 64% of the segregated group.

## Social Skills

The Teacher Rating of Interactional Behavior (TRIB) was used for those children who remained in preschool or kindergarten. The TRIB measures social skills and provides both a positive and negative score.

### Children with Developmental Delays

Comparison of year 3 TRIB scores indicated no significant differences between the two groups for the positive or negative ratings of children's social skills.

Comparison of the data from year

2 to year 3, and year 1 to year 3 teacher ratings indicated no significant differences between the two groups for the rate of change in positive score or negative score.

### Typical Children

Data analysis did not indicate significant differences between the two groups for the positive or negative ratings of the children's social skills.

Comparison of the data from year 2 to year 3, and year 1 to year 3 teacher ratings indicated no significant differences between the two groups for the rate of change in positive score or negative score.

The Walker-McConnell was used to compare those children in first grade or higher for whom the TRIB was no longer applicable. This measure provides standard scores for three subscales: Teacher-Preferred Social Behavior, Peer-Preferred Social Behavior, and School Adjustment Behavior, as well as a total standard score.

### Children with developmental delays

Year 3 analysis revealed no significant differences between the two groups for the total score or the subscale scores. However, it is interesting to note that although not statistically significant, the mainstream group was rated as demonstrating a lower level of social skill than the segregated group. On the total scale, the mean for the mainstream group was 86, very close to one standard deviation.

tion below the national average of 100 and 5 points below the mean of 91 for the segregated group.

### **Typical Children**

As for the children with developmental delays, no significant differences were revealed for the typical children on any of the subscales or the total score. Unlike the differences noted above for the children with developmental delays, the mean scores for the typical children in the mainstream and non-integrated groups were virtually identical.

## **Parent Ratings of Behavior**

The Child Behavior Checklist (CBC), provides a profile of parent reported behavior problems. This profile produces scores for a total problem score, as well as the eight following scales: Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, and Aggressive Behavior. For the total problem scale, scores below 60 are considered in the normal range, scores from 60 to 63 are described as "borderline clinical", and those above 63 represent the clinical range, indicating that intervention may be necessary.

### **Children with Developmental Delays**

Year 3 comparisons on the CBC indicated children in the mainstream group had significantly

lower total problem scores than did their counterparts in the segregated group. Children in the mainstream group had an average total problem score of 52 and children in the segregated group had an average of 59. Analysis of the 8 syndrome scales generally favored the mainstream group.

Comparatively, year 2 and year 3 CBC information revealed no differences in progress between the two groups for any of the assessment areas.

### **Typical Children**

Year 3 comparisons for the two groups yielded essentially similar results for the total score and the 8 syndrome scales.

Analysis of the change in scores from year 2 to year 3 indicated a significant difference in progress for the total problem score. Children in the non-integrated group made greater improvements than their mainstream counterparts resulting in the similar scores noted for year 3.

## **Parent Involvement and Satisfaction**

### **Parents of Children with Developmental Delays**

No significant differences were found for involvement in or satisfaction with their child's educational program. Analysis of the change in scores from year 2 to

year 3 also did not indicate any significant differences between the two groups. Similarly, comparisons of year 1 and year 3 did not yield any significant differences between the groups for changes in scores.

### **Parents of typical children**

During year 3, there was only one significant difference between these groups, and involved the extent to which the parent had been involved in the child's educational program during the current year. The parents of children in the non-integrated group indicated more involvement than did the parents of children in the mainstream group. However, the means of 3.2 and 3.8 on a 5 point scale, indicated moderate levels of involvement for both groups.

Analysis of the change in scores from year 2 to year 3 revealed only one significant difference and concerned the question: "How satisfied are you with your child's current level of involvement with children with special needs?" The parents of children in the mainstream group indicated they were less satisfied in year 3 with their child's level of involvement, while the parents of children in the segregated group indicated they were more satisfied with their child's involvement. These changes in satisfaction paralleled changes regarding "how much" the typical children had been involved with children with special needs at school. Parents of children in the mainstream group indicated less

satisfaction with decreased involvement for their children and parents of children in the segregated group indicated more satisfaction with increased involvement for their youngsters.

Analysis of the change in scores from year 1 to year 3 indicated the same significant difference noted for year 3 regarding the extent to which the parent had been involved in the child's educational program. In addition, significant differences were also noted for questions addressing the involvement as noted in the year 2 to year 3 comparison.

Finally, a significant difference between the groups was found regarding the influence of the involvement with special needs children. Parents of children in the mainstream group indicated less influence than they had in year 1, while parents of children in the non-integrated group indicated more influence. These changes represented a convergence of opinion in year 3 compared to year 1 when parents in the two groups held more differing opinions.

## **Parent Opinions about Integration**

### **Parents of Children with Developmental Delays**

In year 3 there were no significant differences between the groups in total score. The obtained mean score of 58 by each group indi-

cated equal favorability of opinion toward access opportunities for children with special needs.

Analysis of the change in scores from year 2 to year 3 revealed a significant difference in the rate of change between the groups. Descriptive data from year 2 to year 3 indicated that only half the parents in the mainstream group held a more favorable opinion toward integration opportunities compared to 81% of the parents in the segregated group.

Analysis of the change in scores from year 1 to year 3 indicated no significant difference in rate of change between the groups. However, descriptive data indicate that 65% of the parents in the segregated group indicated the same or more favorable opinion toward the integration options while 43% of their counterparts in the mainstream group held this view.

### **Parents of Typical Children**

For the comparison of year 3 total scores, average total scores were virtually identical. This outcome paralleled year 3 findings for the parents of children with developmental delays. Overall, parents of the typical children averaged a favorability rating of 56 and parents of children with developmental delays averaged 58 on the 70 point scale.

Analysis of the change in scores from year 2 to year 3 also did not reveal significant differences between the groups. The mean

change scores indicated that both groups were somewhat less favorable toward the range of integration options in year 3 compared to year 2.

While analysis of the change in scores from year 1 to year 3 did not indicate significant differences between the groups, a wider disparity between the change scores was evidenced. The parents in the mainstream group had a mean change of -7.1 while the parents in the non-integrated group had a mean change of -1.3. The descriptive data indicated that 29% of the parents in the mainstream group maintained or held more favorable opinion toward the integration options while 54% of the parents in the non-integrated group had this opinion.

## **Teacher Opinions about Integration**

The Survey of Attitudes about Integration was used to assess the opinion of teachers in mainstream, segregated, and typical settings who were involved in year 3 of the study. The respondents included 167 preschool and school-age teachers including 11 teachers in mainstream settings, 45 teachers in typical settings, and 21 teachers in segregated settings. Of these 167 teachers, 6 were in preschool settings. Analysis of the group means did not reveal significant differences. The mean favorability rating for each group on the 70

point scale included: mainstream, 54; typical, 55; and segregated, 60. Overall, the mean ratings indicate all three groups of teachers reported similar positive attitudes concerning mainstreaming.

It should be noted that the year 3 group of teachers was comprised primarily of different members from the first two years. For this reason, direct comparisons are not made with this information, rather the information is examined for trends and the stability of the trends from year to year.

## **Administrator Opinions about Integration**

The respondents in this sample included 90 administrators. The responses ranged from 42 to 70 (14 representing the least favorable attitude toward integration and 70 the highest favorable attitude). The mean was 61. As a group, administrators generally held favorable opinions toward integration, maintaining the positive attitudes demonstrated in years 1 and 2.

*The purpose of the Longitudinal Project is to fill the knowledge void about the long-term effects of mainstreaming. That means we are interested in learning more about the outcomes realized for children who experience segregated and mainstream models of education. We sincerely thank every person - child, teacher, parent, and administrator - who is helping in this effort.*

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